DOCUMENT RESUME

ED 109 509 95 CE 004 840

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TITLE The Reserve Army of the Unemployed. Monographs on Career Education.
INSTITUTION Office of Career Education (DHEW/OE), Washington, D.C.
PUB DATE [74]
NOTE 35p.

EDRS PRICE MF-$0.76 HC-$1.95 PLUS POSTAGE
DESCRIPTORS Academic Achievement; Adult Education; *Career Education; Continuous Learning; Employment Opportunities; *Labor Force; *Labor Market; Occupational Choice; Policy Formation; Post Secondary Education; School Community Relationship; *School Industry Relationship; Socioeconomic Influences; *Underemployed; Work Experience

ABSTRACT

The paper, one of a series of monographs, is intended for educators and employers who are actively concerned with improving the interaction between the institutions of education and work. The purpose of the paper is to make educators more aware of the realities of the labor market. The first part of the paper introduces the concept of underemployment (the under-utilization of such human resources as talent, education, and training) and traces its effects on the society, the individual, the economy, and the institution of education. A rapid increase in the educational attainments of the work force and a marked change in work values among young people are then contrasted to a rather static occupational structure, one with only slowly expanding opportunities for good jobs. It is this particular combination of trends that leads to some of the worst problems associated with underemployment. In the final part of the paper, alternative policies for meeting the problems of underemployment are reviewed, with special emphasis given to life-long learning, especially work-based life-long learning. (Author)

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MONOGRAPHS ON CAREER EDUCATION

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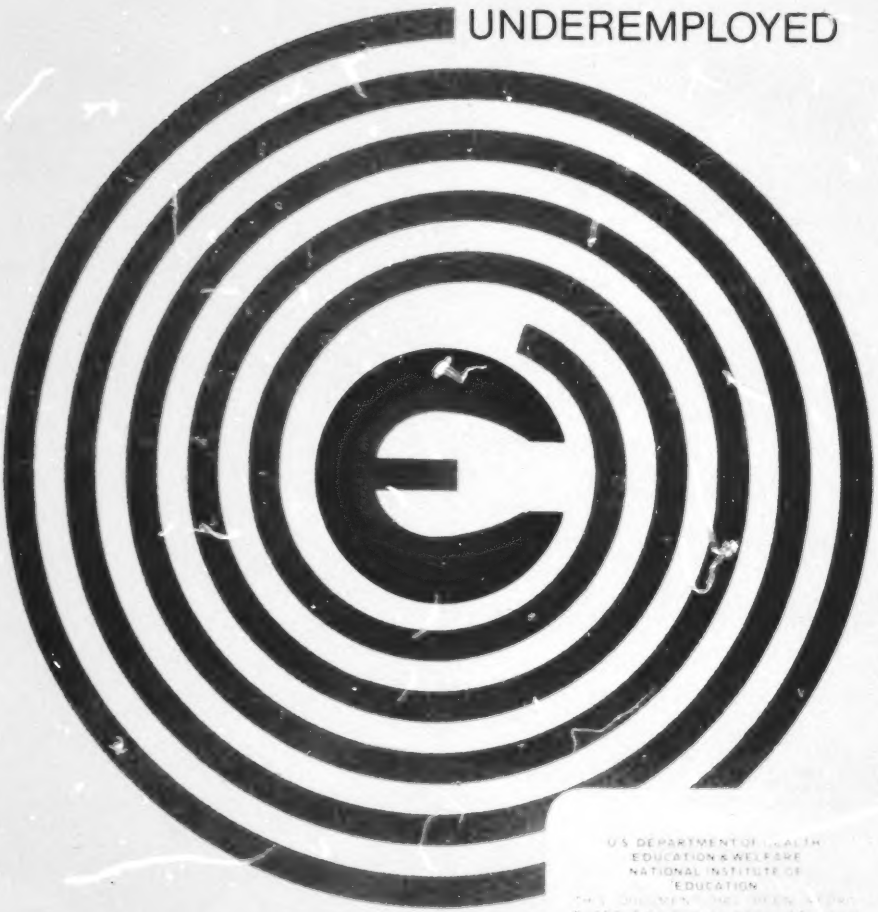

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MONOGRAPHS ON CAREER EDUCATION

THE RESERVE ARMY OF THE UNDEREMPLOYED

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PREFACE

This paper, one of a series of monographs being issued by the Office of Career Education, is intended for educators and employers who are actively concerned with improving the fit between the institutions of education and work. In particular, it is addressed to educators who wish to take the initiative in providing learners with an educational experience that is compatible with a productive and satisfying work life.

The purpose of the paper is to make educators more aware of the realities of the labor market—portentous realities that question such easy assumptions as "a college education will pay off in a good job," and "the most marketable educational background is vocational."

The first part of the paper introduces the concept of underemployment (the under-utilization of such human resources as talent, education, and training) and traces its effects on the society, the individual, the economy, and the institution of education.

A rapid increase in the educational attainments of the work force and a marked change in work values among young people are then contrasted to a rather static occupational structure, one with only slowly expanding opportunities for good jobs. It is this particular combination of trends that leads to some of the worst problems associated with underemployment.

In the final part of the paper, alternative policies for meeting the problems of underemployment are reviewed, with special emphasis given to life-long learning, especially work-based life-long learning.

THE RESERVE ARMY OF THE UNDEREMPLOYED

A portentous social pattern is beginning to emerge in many industrialized nations. In socialist and capitalist economies alike, increasing numbers of highly qualified workers are unable to find jobs that require their skills and training. Thus, a large and growing number of individuals are forced to take jobs that can be performed just as adequately by workers who have far lower levels of educational attainment. Examples of this phenomenon are not startling—indeed, they are becoming commonplace. In England, a young Oxford graduate finds that the only job open to him is as a salesman in an electronics firm. A Stanford Ph.D. takes the best post available upon graduation—as a middle-level bureaucrat in a regional office of the U.S. Department of Labor. In Sweden, a young woman with the equivalency of a B.A. in chemistry finds that the highest status job that is vacant is as a secretary. In Poland, a university graduate takes a job as a clerk in a State-owned industry. And the effect trickles down the occupational scale: In Germany, a graduate of one of his nation's finest technical high schools works as a machinist at a job that less than 5 years ago was held by a worker with only a primary school education.

Finally, and predictably, this process of job displacement reaches its full force at the bottom of the occupational ladder where poorly educated workers are often knocked off the last rung: In California, a black dropout is told that a high school diploma is required to box groceries.

Where Marx had forecast that mass unemployment would become the salient characteristic of labor markets in advanced economies, it is now clear that underemployment—working at less than one's full productive capacity—is more accurately the hallmark of work in industrial societies.

This underutilization of human resources stems most clearly from dissonances and disjunctions in the important and complex relationship between the institutions of education and work. In all societies, one of the primary functions of formal education is the preparation of the young for the world of work. But during the 20th Century this function became *dominant* in many systems of education. Indeed, in schools that served the lower classes, preparation for the world of work became the *sole* function of education. In carrying out this function, schools also assumed the role of society's sorters, selectors, and certifiers. The schools bestowed society's approval on some young people—opening opportunities for further education which led almost inevitably to good jobs and high social class standing. Other students were less fortunate—they were tracked into vocational schools to learn the traits and attitudes appropriate to their working class station in life. Thus, in the process of allocating educational opportunities, the schools ascribed social class standing and, indirectly, the future life styles and life chances of the young.

In the last few years, however, almost all of the developed nations have sought to turn schools away from being the instruments of stratification and towards being the prime tool for the creation of greater social equality. Remarkably, governments with ideologies as diverse as those in Yugoslavia,

Spain, and Denmark are attempting to provide greater equality of occupational opportunity for all social classes through increasing access to education. On one level, these nations have achieved significant success. The median number of years of school attainment has rocketed upwards in every developed country. For example, in the United States blue collar workers in 1952 had a median of only 9.2 years of schooling; by 1972 the figure was 12.0 years. Even more strikingly, college enrollments expanded during this period from 2.6 million to 8.4 million. Significantly, in Europe and Japan the rates of increase in levels of educational attainment have been even more pronounced than in America.

From 1945 to about 1965, labor markets in the industrialized nations were elastic enough to soak up the ever-burgeoning supply of educated workers. Indeed, it seemed that industrial society's appetite for educated workers was insatiable. To meet this seemingly unquenchable demand all the stops were pulled out in the early 1960's and public policy was geared (a) to forestall dropping out of high school, (b) to increase the numbers of college graduates at almost any cost, and (c) to turn out teachers, engineers and scientists in abundance. In America, such activity was justified by patriotic appeals to beat the Russians to the moon. America responded to the challenge with characteristic enthusiasm and over-kill: Ben Wattenberg has calculated that during this decade America built a new junior college every 10 days.

But no socio-economic trend runs on eternally. It is now becoming clear that the ever-expanding supply of educated workers is running up against a ceiling of job demand. A few years ago Columbia's Ivar Berg became one of the first to discover that something like 80 percent of American college graduates were taking jobs that were previously filled by workers with lower educational credentials. In 1974 these problems of underemployment were given official recognition as a national problem in a speech by President Ford to the graduating class of Ohio State University:

> Your professors tell you that education unlocks creative genius and imagination and that you must develop your human potential. And students have accepted this. But then Catch 22 enters the picture. You spend four years in school, graduate, go into the job market, and are told that the rules have changed. . . . To succeed you must acquire further credentials so you go back to the university and ultimately emerge with a Masters or even a Ph.D. . . . And you know what happens next? You go out and look for a job and now they say you are overqualified. . . . The fact of the matter is that education is being strangled—by degrees.

In this speech, Ford called national attention to a problem that had been worrying many leaders in business, labor, and academia; namely, that the rapid increase in the educational attainment of the workforce has been accompanied by a concomitant rise in worker expectations. In particular, the current, younger and more highly-educated generation of workers now expects good jobs as their just reward for their many years in the educational system. Moreover, these expectations are compounded by a shift in values among the young. Increasingly, young workers prefer jobs that are interesting, socially "meaningful," and offer the opportunity for personal growth over jobs that offer only the traditional—and more easily provided—rewards of money and security.

The rub is that no industrialized nation has been able to produce an adequate number of jobs that provide the status and require the skills and educational levels that their workforces are achieving. By way of analogy, the situation is nearly Malthusian in its proportions: Levels of educational attainment have tended to grow in almost geometric progression while the number of jobs that require higher levels of education has tended to grow at a much slower pace.

"CONTRADICTION" AND CONSEQUENCES

There is thus a disjunction between the expectations raised by educational policy and the inability of the economic order to make good on society's promises. There simply are not enough good jobs to go around to everyone who thinks he deserves one. If it were not for the Marxist overtones, this disjunction could be called a contradiction, one that stems from the very success of nations in their efforts to become more egalitarian: To the extent that developed countries are solving the centuries-old problems of providing freer access to education, they are paradoxically creating a situation that in the future threatens to countervail their efforts to achieve greater quality and political stability.

There is some evidence that this contradiction is beginning to create a concatenation of potentially grave social, political, and economic problems in industrial nations. Although opinion varies on how to interpret the available evidence, it appears that national policies designed to upgrade workforces educationally may be creating frustration and low morale among younger workers—workers who, ironically, have the educational backgrounds to articulate their dissatisfactions.

Some of this evidence is strong and unequivocable: Studies undertaken at the University of Michigan, for example, show that people who feel they deserve better jobs than they have come to suffer from what is known as status conflict. At the extreme, some of these workers come to feel trapped in bad jobs, sensing that by rights they deserve better but by circumstances they will probably never achieve more. These feelings are primary sources of dissatisfaction with life and work and correlate highly with problems of poor physical and mental health.

What is clear from almost every study of job dissatisfaction is that the placing of intelligent and/or highly qualified workers in dull and unchallenging jobs is a prescription for pathology—for the worker, the employer, and the society. For example, a counterintuitive study undertaken by Sandia Laboratories indicates that it is intelligent blue collar workers (*not* the dull ones) who are probably the most responsible for damage, low productivity, errors, and accidents in the workplace. And there are many more intelligent blue collar workers than we might imagine—indeed, there are three times as many laborers with I.Q.'s over 130 than there are Ph.D's. (There are, of course many times more laborers—but the point is that laborers are usually and often inappropriately treated as though they were imbeciles).

Employer assumptions about these workers' intelligence has led to jobs designed to be successfully completed by morons. Alvin Goulder describes how such a system leaves major parts of the worker's personality "unemployed":

> In short, vast parts of any personality must be suppressed or repressed in the course of playing a role in industrial society. All that a man is that is not

useful will somehow be excluded. . . and he thereby becomes alienated or estranged from a large sector of his own interests, needs and capacities. Thus, just as there are unemployed men, there is also the *unemployed self*.

In his book *Strategy for Labor*, Andre Gorz describes how underemployment has become the prime source of job dissatisfaction and social alienation in the last half of this century:

> Industry in the last century took from the countryside men who were muscles, lungs, stomach: their muscles missed the open spaces, their lungs the fresh air, their stomachs fresh food; their health declined and the acuteness of their need was but the emptying functioning of their organs in a hostile surrounding world. The industry of the second half of the twentieth century increasingly tends to take men from the universities and colleges, men who have been able to acquire the ability to do creative or independent work; who have curiosity, the ability to synthesize, to analyze, to invent, and to assimilate, an ability which spins in a vacuum and runs the risk of perishing for lack of an opportunity to be usefully put to work.

Although Gorz is a Marxist, the problem of unemployed selves is not just the concern of the radical left. Indeed, managers in the United States and Europe have begun to note the problem. Myron Clark, past president of the Society for the Advancement of Management, estimates that 80 percent of all workers in America are underemployed. The massive Survey of Working Conditions prepared for the U.S. Department of Labor found that 35 percent of all workers feel over-qualified for their jobs. But, numbers dehumanize what is essentially a problem of the human spirit. Perhaps the most poignant statement of the problem of underemployment occurred in an interview in Studs Terkel's *Working*. A marvelously articulate woman worker told Terkel that "Most of us have jobs that are too small for our spirits."

Although such evidence is depressing, it is possible that the social disparity between the promises of education policy and the realities of work are creating problems even *more* acute than job dissatisfaction. Society may be in the throes of creating a new meritocracy, one composed of the 20 percent of the population who hold almost all the good jobs in the economy. In itself, the creation of an elite is not a new phenomenon. Nor is it surprising that this elite, like others that have gone before it, appears to be amassing social and political power to match its weight in the economic order. Where there is a noteworthy break from past patterns of social class is the growing refusal of the 80 percent of the population (the "masses" who have bad jobs) to accept the *right* of the elite to its special privileges. What is new in history is that the masses are now almost as well-educated as the elite. Consequently, they look on the meritocracy with envy and, perhaps, hostility. Although there is little hard data to support this, social observers ranging from Daniel Bell and Peter Drucker to special commissions that have reported to the American and Czech governments have all seen signs of potential conflict between those who have bad jobs and those who have good jobs.

The Czech study, prepared during the liberal Dubcek thaw, warns of a new form of class polarization, one that will afflict even the socialist States:

> . . . the dominant feature in the social stratification starts to be differentiation primarily according to the content of work. The long-term existence of

two distinct strata working side by side—people performing exacting creative work and others occupied in simple operative jobs—will then have to be seen as a serious problem.

The Czechs argue that the antagonism will spill out of the workplace and there will be "resultant disagreements in ideas on life apart from work." Signs of such emergent, class-based *ressentiment* may be seen in the evident ungluing of the traditional left-center political coalitions in the Western democracies. In the past, Britain, Scandanavia, and the United States had powerful parties composed of liberal-intellectual and labor-working-class factions. In Europe and America, antagonism between the professional, upper-middle-class liberals and the workers has surfaced during the last 2 years. The Democratic party of the United States saw its once solid labor support slip away when they nominated the liberal's candidate for the Presidency in 1972. In the 1974 British election, the Liberal party siphoned-off much of the middle-class support that had recently gone to the Labour Party. (A great number of these voters returned to the fold in late 1974, however). And in Sweden and Denmark, Government officials, teachers, and others who have traditionally supported the Socialists are becoming increasingly restive as they see salary and other distinctions between the classes being eroded.

Such potential social conflict stems in part from the difficulties that societies encounter in allocating who should get the relatively small number of good jobs. And, when almost everyone in society has high levels of educational attainment, another, and potentially more disruptive, question arises: Who should do the dirty but necessary tasks of civilization? To put the problem crudely, it will be rather difficult to recruit college graduates to clean toilets in public buildings—but the toilets will have to be cleaned by somebody.

Society's reflex response to such problems has been to lay ever-heavier stress on the value of educational credentials. Employers have responded to larger pools of qualified workers by needlessly raising the credential requirements for jobs—without upgrading the demands, challenges, or rewards of these jobs. (A 1967 survey in San Francisco showed that 17 percent of employers required a high school diploma for *unskilled* jobs). Thus, the problems of equity and equality have been exacerbated by the rapid expansion of educational attainment: Credentialism creates even greater conditions of inequality for those on the bottom.

Switching to an economic perspective, there is some evidence that this inflation of the value of educational credentials may lead to an actual lowering of productivity. It was argued in the 1960's by Theodore Schultz and the "human capitalists" that investments in education were investments in the Gross National Product. These economists felt that upgrading the workforce educationally would lead to higher productivity as underqualified workers were replaced by those with greater skills. Ivar Berg has argued that the reality of the process is quite different from the economists' model. What actually happens is a process of unproductive job dislocation: More highly qualified workers bump slightly less qualified workers from their jobs. No increase in productivity occurs because the nature of the jobs is usually such that they do not require higher skills. Productivity may actually drop because the more highly qualified worker is likely to be dissatisfied with the job. In sum, increasing the educational level

of the work force above a certain level, without concomitant changes in the structure of work to capitalize on the increased capabilities of workers, will probably have a slightly negative impact on productivity.

Universities, corporations, and the Government have all adopted the human capitalist mode of calculating the return on investment per year of education in the last two decades. Ironically, as the economic ceiling on the need for more highly qualified workers is being reached, the increasing supply may actually be driving down the market value of educational credentials. As it becomes clear that education will not pay off as promised, there is a very real possibility of a massive build-up of disillusionment and a sense of betrayal among those stuck with a "bad investment." The selling of education solely as a passport to a good job may backfire. A dissapointed generation may withdraw its support for the entire institution. Then, the important functions of education for self-development, leisure, family, and citizenship will also be imperiled. The refusals of middle-class voters to approve school bonds, the cries of intellectuals to de-school society, and the general attack on the irrelevance of education may be the opening salvos of a general move to discredit an institution that has failed to meet the false economic expectations that have been created for it.

These, then, are the major symptoms that something is wrong at the education and work intersection. These problems are what President Ford was referring to when he said that education is being strangled by degrees. He and other influential leaders have offered a policy response to these problems—greater stress on vocational education. The response is simple and direct. But the war on poverty has taught us that solutions to social problems are seldom found by mounting frontal assaults. It is often best to address such problems indirectly. Therefore, before losing our heads and administering an overdose of vocationalism to meet the complex problems of underemployment we might first try to understand the situation both more deeply and more broadly to see what other policy options might exist. Specifically, we should start by asking what kind of future is in store for American workers if the nation continues its *current* manpower and education policies.

THE NEW WORK FORCE

Manpower experts know a little bit about a lot of things, but what they know best are the demographic shifts that are likely to occur in the work force over the next 20 years. Their margin of error in predicting work force trends is small—not because the techniques economists and statisticians use are terribly sophisticated, but because the raw data with which they must work exists in a quite convenient and usable form. That is to say that almost all of the workers' noses that will have to be counted over the next 20 years are currently alive, wiggling, and countable now. Thus, it is known with rather great certainty that the work force in the future will have higher levels of educational attainment. With a little less certainty we know that the expectations of these workers will be higher than those of the present work force. And there is enough hard evidence to forecast that the values of the work force will be considerably different in the future. It is worth a moment to briefly examine these data

because they point to the greater appropriateness of some policy solutions than to others. We might begin this analysis with a simple fact: The high school graduating class of 1970 will be 33 years old in 1985. Significantly, the average age of the work force will shift downward during the next 15 years or so, and starting in the mid 1980's, 25- to 34-year-olds will become the largest age cohort in the work force. This means that the current crop of high school students will constitute not only the bulk of our work force from 1985 to 1995, they will then be at the age at which workers have traditionally been most productive. Consequently, it is important to learn something about these young people, for we will be depending on them to supply goods and services in our old age.

First, it is rather certain that by 1990 something like 30 percent of these young people will have earned a B.A. or a higher degree. Another 20 percent will have 1 or more years of college. Looked at another way, by as early as 1980, half of the workers in America with 4 or more years of college will be under the age of 35, and half of all the workers with no more than an elementary school education will be over the age of 50. The picture developing is of a society with a young, well-educated work force that is rather rapidly replacing an older, much less educated work force. By 1980, one in four American workers will have a college degree, and college enrollments may zoom to 20 million by the year 2000.

Such statistics documenting the educational explosion are so familiar that they no longer shock. Education has become America's largest industry, as the U.S. Commissioner of Education recently noted. Nearly 30 percent of the American population is involved in education in one role or another. We spend about $108 billion annually on education, which accounts for about 8 percent of the Gross National Product. And, as Daniel Patrick Moynihan has pointed out, increases in expenditures per annum on education have outpaced rises in the G.N.P. by about 3 percent. Can this exponential growth in education continue? While it is true that enrollments in primary and secondary education are dropping as the baby boom bulge passes through the educational system, the relief is only temporary at these levels and will have little effect on higher education. The demographers at the U.S. Bureau of the Census (not known by temperament to be a bullish lot) are forecasting increasingly high enrollments at all levels of schooling for the next 25 years under any of the three most likely alternative assumptions about the future.

Concomitant with the rise in educational attainment among young people is their increasing desire for even *more* education and their increasing aspirations for *better* jobs. It is beyond the state of the art of the social sciences to identify whether higher levels of education cause higher expectations, or whether higher expectations lead people to pursue higher levels of education and better jobs. What is known is that there is a strong and persistent positive correlation between educational attainment and rising levels of expectations. That young people want more schooling is underscored by a recent American College Testing Service study that showed that 65 percent of 11th graders plan to attend 2 or more years of college, and 46 percent plan to attend for 3 years or more. And them that has, wants more: In a study of college freshman, Alexander Astin found that 57 percent plan to go on to graduate school.

Equally measurable and conspicuous is the increasing desire of young people for good, high status jobs. A recent Office of Education survey found that over 54 percent of high school seniors desired professional or managerial level jobs. Not surprisingly, at higher levels of educational attainment there are found even higher levels of job expectations. In California's community colleges, 64 percent of the students aspire to professional or managerial jobs (even though only 32 percent of the students come from families headed by individuals in these occupational categories).

The final important fact to be considered here about the cohort of young people who will constitute the most important part of our work force in the next 20 years, is that their values are markedly dissimilar from their parents' values. For example, the several major surveys of job satisfaction that have been conducted over the last few years agree on one important fact: Young workers are far more dissatisfied than older workers. Why this would be so is best explained by attitude surveys that show a sharp difference between generations in their attitudes and values about work. Daniel Yankelovich, who has been monitoring changes in the values of college-aged Americans since 1968, finds that the "counter-culture" values held by only a minority of college students in the late 1960's have spread to about two-thirds of the college-age cohort, including a large portion of non-college and blue-collar youth. These new values are often articulated in the desire for self-fulfillment on the job. Apparently, great numbers of young people are looking for jobs that offer more than just money. Young people say that they want a chance to grow and to learn on challenging jobs that contribute something to society and to other people. Significantly, the desire for jobs offering intrinsic rewards has increased over the past 5 years, even in the face of a tightening job market.

In the past, attitudes changed slowly with each successive *generation*. Today, it seems that almost a generation of attitudes separates each *graduating class* of high school seniors—and each one appears more committed than its predecessor to the new work values. An Office of Education study of high school seniors found work attitudes similar to the Yankelovich study of college students—but the high school students' new work attitudes were even more pronounced. Only 18 percent of these seniors ranked "having lots of money" as being of first importance in their lives. When it came to choosing a career, their first choice was one that was helpful to others and useful to society—jobs that they interpret as having the intrinsic characteristics of professional or managerial level work.

In sum: (a) The educational attainment of the work force will increase exponentially over the next several decades; (b) the current crop of high school students desire not only good jobs in terms of status, but also interesting and meaningful jobs that lead to self-fulfillment; and (c) alarmingly, these young workers are the most disaffected part of the work force because they cannot find jobs that satisfy their requirements of challenge, growth, and self-fulfillment. It is common to dismiss such findings with the truism that "kids will grow out of these idealistic notions." Indeed, S. M. Lipset, writing in the *Public Interest*, has demonstrated that people *do* moderate their views as they grow older. But each successive generation still ends up more liberal or idealistic than its predecessor.

Thus, the problems of underemployment are not likely to disappear as the current generation matures. Job dissatisfaction is not going to be "just a youth problem" in future decades. Moreover, this problem may be exacerbated by the kinds of jobs that are likely to be available in post-industrial society.

WORK IN POST-INDUSTRIAL SOCIETY

Manpower experts seem to know more about questions of supply (the demographics of tomorrow's work force) than they do about demand (the kinds of jobs that will be available in the future). But most experts agree that the following kinds of changes are likely to occur in the labor market over the next two decades:

- There will be continued shift away from a blue-collar industrial economy towards a white-collar service economy.
- There will be continued growth in the size of the public and private organizations that hire the bulk of American workers.
- Government will continue to be the fastest growing sector of the economy (One out of six Americans is already employed by some level of government).
- Technology will continue to spread and machines will replace people on many jobs
- There will be a continuing slight reduction in the hours worked per week.

To many observers, these trends portend a better world and a higher quality of life. Philosopher Sebastian de Grazia foresees a leisure society in which machines will do the labor and humans will be free for contemplation, creation, and self-development. Manpower specialist Sar Levitan sees greater social and career mobility for workers as many blue-collar workers move into cleaner and higher-status white-collar jobs. Sociologist Daniel Bell looks at the same trends and sees the makings of a more just society–a meritocracy based on knowledge and not on power, birth, or inherited wealth. Economist Theodore Schultz sees a boost in productivity, economic growth, and individual income as education "upgrades" the work force.

It is possible to share with these authors their desire for such future occurrences without sharing their sanguine views that these, indeed, will be the outcomes of present or predicted policies or trends. Another scenario–one far less utopian–can be just as convincingly drawn from the same facts. For example, it appears that the slight increase in free-time in the future will accrue to those in the work force (blue-collar and clerical workers) *least* prepared educationally to benefit from true, creative leisure as defined by de Grazia. In response to Levitan, it would seem that the new white-collar jobs that are being created are every bit as stultifying and human growth-restrictive as the jobs in the industrial sector that are being replaced. Also, it seems more than probable that Bell's view of a just, meritocratic state is an elitist perspective–the 80 percent of the population who are not members of the meritocracy are unlikely to view such a state as just. And it is likely that Schultz's views are anachronistic–America may have reached a point of diminishing returns

concerning the economic pay-off of expanding education and, perhaps more important, economic growth is decreasingly seen as the most desirable goal of public policy.

Do the facts support an optimistic or pessimistic forecast for the future of work? The problem here is that while facts are objective, their interpretation is subjective. Being by temperament more akin to Cassandra than to Pangloss, my subjective interpretation of the facts tends towards the pessimistic. In support of this bias, I would point to the kinds of jobs that are being created in the two fastest growing sectors of the economy: "Miscellaneous services" and Government. Service industry jobs (not to be confused with the "service sector" which includes almost all white-collar activities that do not produce goods) are usually thought of as the representative occupations of post-industrial society. Working behind the counter at McDonalds or ticketing passengers for T.W.A. are typical service jobs. Some of these jobs are good jobs. For the worker in an industrial job where he has been assaulted day in and out by the relentless clamor of a machine, the opportunity of taking a service job (in which the most salient characteristic is human contact) would appear attractive indeed. But most of the people who take the new service jobs are not transfers from industry; they are usually young people, many of whom have had at least some higher education. For them, service jobs appear to have many of the worst characteristics of blue-collar work (the jobs are dull, repetitive, fractionated, and offer little challenge or personal autonomy). Also, these new jobs often lack the best characteristics of skilled, blue-collar jobs (relatively high salary, security, union protection, and the sense of mastery that comes from producing something tangible and needed by society).

In 1955, 15.9 percent of all jobs were in services; by 1972 over 20 percent of the work force was in this industry. For example, between 1960 and 1970, the number of orderlies and nurses aides increased by 420,000; the number of janitors by 530,000; and the number of busboys and dishwashers by 70,000. Characteristically, such jobs offer low salary (nearly 30 percent of all services workers earn less than $4,000 per annum), and offer little in the way of career opportunities. In hospitals, orderlies do not progress up a career ladder to become nurses; in hotels, chambermaids seldom advance to become desk clerks. The economy is thus creating a great number of unattractive jobs.

Moreover, many new jobs that statistically look like good jobs (health paraprofessionals, teachers' aides, technicians with a 2-year A.A.S. degree) do not have career ladders either: X-ray technicians do not progress up a ladder and become radiologists. In fact, the scope of the job and the autonomy of the worker in paraprofessional "new careers" is greatly limited by the prerogatives of the professionals who supervise them.

In reality, there are precious few jobs that make much use of higher-order skills, training, or intelligence. The Bureau of Labor Statistics estimates that only about 20 percent of all jobs will require a college education for successful performance in 1980. More depressing, the Office of Management and the Budget finds that one-half of all current jobs do not even require a high school education.

That America is creating many more bad jobs than good jobs can be illustrated by Khafkaesque examples from out fastest growing industry, State

and local government. Here—where one out of three new jobs are being created—most of the rapidly expanding demand is for services (in hospitals, police, maintenance) or for jobs with services characteristics (typing, clerical work, etc.). When teachers are subtracted from the total of government employees, the two largest remaining categories are clerical and service workers who, together, account for about 78 percent of all non-teaching jobs. Even leaving teachers in the total, clerical, and service jobs constitute about 42 percent of all Government jobs, while the comparable figure in private industry is only about 28 percent. And now that the Federal sluice gates have opened, and revenue sharing money is gushing into State and local coffers, public jobs are being created at a clip that probably exceeds the pace of the New Deal. What kinds of jobs are being created? While not exactly leaf raking, the jobs are not of the nature likely to motivate the new generation of qualified workers. According to Ivar Berg, directors of Government agencies report that 60-70 percent of the jobs they are creating are "in the categories of aide, attendant and assistant, clerical workers, custodian, and semi-skilled blue collar."

This evidence opens President Ford's solution to the problems of under-employment to considerable question. Vocational training for what? To bus dishes? To work in a typing pool?

SUPPLY AND DEMAND

There is some comfort to be gained in the knowledge that the professional and technical category of jobs is the fastest growing segment of the work force. According to the Department of Labor, between 1972 and 1985, there will be about 18 million openings for high status jobs. There will be two primary sources of these openings, the creation of new jobs, and, more significantly, the retirement of people who currently occupy these posts. Although this number of job openings seems impressive, the accomplishment of the economy is tarnished rather severely by the fact that there will be as many as 22 million people with college degrees competing for these jobs. Significantly, even this large, potential shortfall of 4 million good jobs may be a gross underestimate, because all of the jobs in the high status categories are not attractive to college graduates. In reality, many of the technical and managerial positions included in these categories offer little in the way of satisfaction, status or salary (for example, 5.4 percent of "professional-technical" workers and 7.0 percent of "managers" earn less than $4,000 per year). Moreover, most of the jobs that will be opening due to retirement over the next two decades cannot really be considered "choice," because they are currently held by workers who do not have college degrees. And to make matters worse, competition for the few truly good jobs will be further exacerbated by the 120,000 trained professionals who will immigrate to America annually.

Although the "professional-technical" category will probably grow to where it constitutes over 20 percent of the work force by 1985, there still may be as many as two to two and a half college graduates competing for every choice job. Even the conservative researchers at the Bureau of Labor Statistics estimate an annual surplus of 140,000 college graduates per year by 1980. And using nearly

the same careful methods employed by the B.L.S., the National Planning Association estimates that the annual surplus may grow to 700,000 by 1985.

But the extrapolation of trends is fraught with a high potential for error. Events can intervene and obviate the most careful of predictions. Without a crystal ball that can accurately foresee such potentially potent influences on the labor market as war, technological breakthroughs, changes in values and political events, it would be rather irresponsible to predict a general shortage of good jobs in the next decade. Particularly, some would argue, since the allocation of jobs occurs through market mechanisms, and the market has a way of adjusting itself to a changing environment. How successful will the market be in balancing supply and demand? The National Planning Association study indicates that there will be some measure of success. For example, the educational upgrading of the work force has freed many educated blacks and other minority workers from the necessity of doing society's dirty work—as laborers, janitors, and charwomen. The net effect is that in terms of worker qualifications, demand will soon exceed supply in lower level jobs. And, at the same time, the supply of highly qualified workers will exceed demand in higher level jobs. *But no "shortages" or "surpluses" will occur* at either end of the spectrum. There will still be someone to clean the toilets, and Ph.D's will not be on breadlines. The labor market will complexly adjust itself across the board to make supply meet demand. For the good jobs, the market will adjust by raising educational requirements; for the bad jobs, salaries will be increased and working conditions improved. Already, young white workers—half of whom are students—are taking the places of many black workers in the best unskilled and semi-skilled jobs. This could be viewed as a step towards greater equality in the society; unfortunately, for the least educated blacks, it has merely meant increased competition among themselves for the worst jobs that the whites and better-off blacks would never touch. Apparently, the market does not function to the advantage of those who do not have the characteristics that are currently seen as attractive to employers. How well a poor, unschooled black might perform in a given job is irrelevant to the market—the market values whiteness and schooling, even when these are irrelevent to potential job performance.

At the other end of the occupational scale, the process of the balancing of supply and demand also leads to dislocations. As competition grows keener for good jobs, fewer workers benefit—indeed, many qualified workers are being bumped to lower statuses. Eventually, salaries might become compressed at the sub-professional level because employers can pick and choose among the reserve army of the underemployed: If one qualified worker refuses a job at a low salary, there is always another who is willing to take it. Important, these problems of dislocation are not just ones to be found in the distant future—in 1971, 36 percent of male college graduates were unable to find professional or managerial level jobs upon graduation. An even more immediate problem is that the brunt or underemployment falls more heavily on the worker at the margin of professional status, the person who once had access to good jobs but is now downwardly mobile. For example, in 1971, only 4 percent of high school graduates found choice jobs, where 10 years ago the majority of managers and professionals lacked college degrees.

Most conspicuously, the ranks of women are a legion in the reserve army of the underemployed. Women, as a group, are overrepresented in some of the worst jobs in the economy—over 90 percent of all receptionists, secretaries, telephone operators, sewers, and stitchers are women. At the same time, women have nearly the same educational qualifications as men. This leads to the not unusual situation in which a woman secretary will have higher educational credentials than her male boss. It is not surprising, then, that the Survey of Working Conditions found that women in jobs they considered below what they deserve based on their credentials are one of the most dissatisfied segments of the work force (along with young blacks).

It was once the case that women were the most docile workers in the labor force—willing to do dull, repetitive, and unchallenging work that men found demeaning. They were undamaged psychologically by these jobs because they identified themselves as mothers and wives, not as blue-collar workers. Work was purely instrumental for the great majority of women—and not a primary source of identity as it was for men. Today, however, a growing number of women want and expect the same psychological and social rewards from work that men receive—a sense of identity, self-esteem, and mastery (in addition, of course, to being paid as much as men for the same work). That they have largely been denied these satisfactions due to the maldistribution of good jobs has led to the most important and far-reaching social movement of the age. The desire for good jobs—not just any jobs—has become a hallmark of the women's liberation movement. And, as men are finding out, hell hath no fury like that of a woman underemployed.

The market has clearly failed to meet the underemployment problems of such groups as women, the disadvantaged, and sub-professionals. Although in one sense there is a general shortage of good jobs, the effects of underemployment are thus distributed differentially across the spectrum of workers, hitting hardest those with personal characteristics that have "low market value"—that is, blacks, women, those with little schooling, old people, young people, and even ugly people. These people do not have a share of good jobs proportionate to their share of human resources (in terms of talent, skills, intelligence, willingness to work, and so forth). Yet, both a sense of equity and concern for national productivity would seem to argue that intelligent and capable workers should have the most demanding jobs regardless of their other characteristics. It is not only unfair, it harms national economic output, to put an intelligent black in a janitorial job merely because he is black, or to deny a talented engineer a promotion because he lacks a Ph.D.

The market cannot be expected to self-correct and meet these imperfections in its own mechanisms. It was the market after all that created the reliance on false credentials. Moreover, a free market works to the benefit of all only when there is great social and economic equality. Thus, the correction of the results of underemployment are a precondition for the market to work! That is, for the market to work, there would have to be greater mobility between jobs, and restrictions that limit the freedom of choice of workers would have to be eliminated—such as discrimination and unequal access to jobs and education.

In addition to discrimination, it seems that another barrier to free play may be placed on the market—a policy of zero economic growth. Little analysis has

yet been done on the labor market effects of such a policy, but an educated prediction would be that the effects on underemployment—particularly for blacks and women in the short-run—are likely to be quite negative. A potential source of societal hostility and tension derives from the fact that women and blacks are asking for good jobs just at the time these jobs are becoming scarce. According to personnel directors in large firms, affirmative action programs are being stalled not by a shortage of qualified workers, but by a shortage of good jobs. Because of the down cycle in the economy, the economic growth that could have been expected to open new jobs for minorities and women has all but abated. These new workers now have to go into sometimes bitter competition for jobs with equally qualified men who have been standing in the promotion queue for many years.

If growth is to be limited permanently for environmental reasons, then the labor market will come chronically to resemble the way it looks during this period of recession. Job openings would come about mainly through retirement, not through the creation of new jobs. More basically, zero growth might require a great reduction in Federal spending for defense and space—industries that have intensive rates of energy and natural resource usage. These are also industries that have employed great numbers of highly-trained workers. Federal spending might increase in such fields as health, welfare, housing, transportation, communications, and education—fields (with the exception of education) that are overwhelmingly composed of middle- and lower-level jobs. Moreover, as the productive and extractive industries were allowed to shrink, and as services were encouraged to grow, national productivity would fall. This would probably create additional problems of unemployment and underemployment. Perhaps on the positive side, machine labor would be replaced by human labor in some fields, which could create employment (and, in the crafts, might even create some satisfying employment). But replacing humans for machines in agriculture, construction, and clerical work can hardly be viewed as progress toward a more humane world of work. Thus, limits to growth is a wildcard in forecasts about future workforce supply and demand.

EVERYONE'S FAVORITE SOLUTION

If the market cannot be relied upon to put the reserve army of the underemployed back on active duty, what can (or should) be done? The policy options, it turns out, are many. For example, the *Work in America* task force offered evidence that jobs can be redesigned to engage the "unemployed self" of many workers. In particular, routine assembly-line and continuous process tasks have been redesigned to give workers more autonomy, challenge, and participation in decision making. General Foods, Proctor and Gamble, and Corning Glass are among the companies who have had great success in increasing both worker satisfaction and productivity. Although the potential of job redesign has just begun to be tapped, it will probably never be a panacea for the problems of underemployment. Currently, the job enrichment experts who are scurrying about trying to increase the supply of good jobs through task redesign are starting to find that there is not much one can do to make cleaning toilets

interesting for someone with an I.Q. of 130, no matter how much autonomy he or she is given. Many jobs simply cannot be made into good jobs for some people.

Consequently, improving the matching of people to jobs is more promising response to underemployment. But it, too, appears to have several limitations. Although it has been shown rather conclusively that a good fit between worker and job is the key to job satisfaction, it is not known how to make this knowledge operational. Counselors and experts in job measurement do not know how to assess individual psychic needs or how to match these with job requirements. At least three other problems exist with this otherwise attractive solution. First, the supply of bright workers probably exceeds the supply of good jobs, so even a system of perfect matching would fail to serve the needs of some workers. Second, the only available measure of human "fitness" for jobs that is reliable is the I.Q. test, a measure that is in rather considerable disrepute (particularly among those who would probably benefit most from its use). And, most importantly, who is going to tell the dull worker that the job he covets is reserved for bright individuals?

In 1972, an Assistant Secretary of Labor suggested in a memo to HEW that the problem of underemployment would be "solved" if the Office of Education quit educating so many people. He was right of course, but this option is hardly going to be well received in a society dedicated to democracy and equality of opportunity. The other simple solutions to the problem also turn out to be fraught with rather costly consequences. For example, in Northern Europe the problem has been "solved" with the importation of some 9 million foreign workers. This method of bringing supply and demand into equilibrium raises some severe social and moral questions, not the least of which is the effect on the workers who have been separated from their families. As France, Germany, and Scandanavia now find that they have imported the racial and ethnic problems that they have always enjoyed casting opprobrium on America for failing to solve, the wisdom of importing people to do the dirty work of Europe is now experiencing wide-scale skepticism.

One inescapable fact that emerges from a review of the real and growing problems of underemployment is that there is no single or simple solution. Even that simplest and most final of all "solutions"--nationalization of industry--would not solve the problem: Job dissatisfaction, low productivity, underemployment, and class inequalities are, apparently, also rampant from the Danube to the Volga. It is clear that underemployment is in the category of problems like pollution, inflation and alienation which are endemic to advanced, industrial nations, and are part of the price that is paid for materialism and a relatively high standard of living.

Nevertheless, there are public policies and economic practices that might ameliorate the problems of underemployment, although none is a panacea. For example, it might be helpful to pursue the question of improper application of credential requirements in the courts. It might be worth seeking an extension of the *Griggs vs. Duke Power* and *Buckner vs. Goodyear* rulings against companies that make improper and discriminatory use of credential requirements in hiring and promotion. On another front, perhaps unions and management should be encouraged to pursue experiments with job redesign, and with worker

participation in profits and decision-making. And the Federal government might explore facilitating mid-life retraining and job change for workers whose potential is currently under-utilized.

Changes in education also appear warranted. But everyone's favorite solution—the extension of vocational education—is probably the worst policy to pursue to meet the problems of underemployment.

The disparity between the expectations of the young and the realities of the labor market can be most readily, thoroughly and disastrously resolved through a massive program of vocational education. A lesson of history is that governments can render entire social classes docile and obedient through educational policies. In the past, in Europe and America (and, today, most strikingly, in South Africa) systems of second-class education for second-class citizens have lowered the expectations and self-esteem of disadvantaged groups and left them willing hewers, drawers and toilers. H. G. Wells was one of the first reformers to argue against class segregation in school curriculums:

> The British Education Act of 1870 was not an Act for common universal education, it was an Act to educate the lower-classes for employment on lower-class lines, and with specially trained, inferior teachers who had no universal quality.

Vocational training was thus a product of the needs of 19th century industrialism. As such, it is correctly viewed today as an undemocratic anachronism, a way of preserving a dual form of education—one stream for "gentlemen" the other for "ruffians." Even these labels are out-of-date in modern society, but the dual system of education still persists as a vestige of an unlamented era. Regretably, the results of the dual system are the same today as they were when Wells was writing: The educational track that one gets into at an early age largely determines one's occupational future and social class standing.

In Europe, there is rather wide-based agreement that dual systems of education are incompatible with democratic social and political institutions. On the east side of the Atlantic, the integration of vocational and academic tracks, and of working and middle-class students, is the primary goal of educational reform. Contrarily, in America, we are about to embark on the re-creation of the kind of dual system from which the Europeans are just now painfully extracting themselves. Next year, a major Vocational Education bill will waltz through the Congress with nary a dissenting vote, supported by a smorgasbord of usually competing interests, including President Ford, George Meany, The Association of American Manufactures and major black and Chicano groups. The Office of Education is assuming passage of the bill, and predicts that by 1977 over 50 percent of all American high school youth will be in vocational education programs (doubling the 1972 figure of 24 percent).

Why is it that vocational education is acquiring such a grip on the American mentality? One can assume that the depressingly high teenage unemployment rate—and the resultant nightmarish apparition of masses of

unemployed (black) juveniles roaming the streets frightens decision-makers into support of these programs.*

Still, much of the support for vocational education is a response to real problems in the education-work nexus. There is no doubt a deep understanding on the part of a large segment of high school youth that further education will not guarantee them good jobs. Hence, they grasp at a program that promises early and easy occupational success. This promise of a well-paying job upon graduation from high school is especially seductive to minority, ethnic, and other working-class youth who have been taught to believe that they cannot succeed in middle-class institutions, such as 4-year colleges. In effect, these disadvantaged youth are told that vocational training will get them a better job than they deserve.

The reality of vocational training is quite different: An evaluation conducted for the *Work in America* study by Beatrice Reubens showed that the initial employment record of vocational graduates in terms of income, job status, turnover, upward mobility, unemployment rates, and job satisfaction is no better than for students in academic programs and, in the long run, is much worse. In addition, several critics have demonstrated that the skills taught in vocational programs are too narrow for a fast-changing world of work—the skills taught are often obsolete before they are ever used. And, because vocational graduates have been trained so narrowly and illiberally, there is no base for employers to build on with continuing, on-the-job training. Thus, tragically, vocational training is often a terminal learning experience, a passport to a dead-end life.

Because of the near-impossibility of forecasting specific job demand, vocational graduates are often trained for jobs that don't exist. Moreover, such training is concentrated in declining fields (such as agriculture) and in fields of questionable merit (home economics), while the fast-growing world of white-collar, service employment is completely ignored.

But even the above criticisms *accept* the contention of vocational educators that unemployment and underemployment are the result of the lack of specific skills. But this most basic of assumptions of vocational education turns out, on close analysis, to be more assertion than fact. As the Government studies cited earlier indicate, most entry-level jobs do not require specific skills. Indeed, most jobs for high school graduates can be learned on the job in the span of a couple of weeks. Most employers end up doing the specific training themselves. Thus, the skills employers are looking for in graduates are not specific to a machine or an industry—they want young workers who can read, write, compute, pick up

*In fact, the rates of teenage unemployment seem to be the result of such factors as demographics (the baby boom has temporarily inflated the problem), individual choice (most unemployed youth will only accept part-time jobs), an overall shortage of jobs (due in part to the large numbers of women competing with youth for part-time jobs), and racial discrimination (unemployment among black youths is twice the rate for whites). That none of these factors is susceptible to educational solutions has not deterred the supporters of vocational education.

new skills quickly and eagerly, and interact cooperatively with others. These are the adaptive skills of liberal education, not the specific skills of vocational education.

Finally, vocational education cannot be viewed as compatible with the new work values of the current generation. That vocational education is the handmaiden of an out-moded and inhumane industrial order is exemplified by the recent gift of a $5 million plant from the General Electric Company to the Cleveland school system in which vocational students are trained to work on an assembly-line. In light of such a "gift," one is not inclined to apologize for John Holt's hyperbole when he describes the American educational system as:

> . . .coercive, manipulative, and dishonest.. .it destroys rather than fosters independence, autonomy, curiosity, dignity and self-respect. It is education not for freedom but training for slavery.

LEARNING AS EXPERIENCE

Apparently, as long as preparation for work is the primary goal of education the problems of underemployment will exist. This is so because there is no imaginable future in which all jobs will be challenging for all workers. Since all jobs cannot be made into good jobs, this conclusion would seem to point towards policies that break the expectation that education will pay-off in good jobs.

What this means is that education might be more "relevant" for work if it tried to be less self-consiously relevant, as in vocational education. Even the new (and, often, progressive) notion of career education potentially might subvert the important social, personal, and academic goals of education in an effort to "gear all education to the world of work"–the goal of career education, as expressed by former U.S. Commissioner of Education, Sidney Marland.

But a career is more than a job or a series of jobs, it is the course of events that constitute a life. (Indeed, career comes from the Latin word meaning course or road). It is now rather widely accepted by psychologists that most people find life rewarding and satisfying when it is experienced as a continuous course towards fulfilling their individual potential–both on and off the job. Beginning with John Dewey, a small number of American educators have built on this notion and have tried to make human growth the goal of education. It usually takes about 30 years between the introduction of an idea and its wide implementation, and Dewey's concepts seemed about ready to achieve acceptance in the late 1960's; finally having shaken off the crippling effects of three decades of misinterpretation and misrepresentation by his friends and foes alike. Then, the economy tourned sour. Now, with unemployment increasing, vocationalism has again reared its atavistic head, and learning for life again is attacked as an unrealistic luxury. The shame of the situation is that education for growth is not a luxury–in a time of unemployment and underemployment it becomes a necessity.

Kenneth Hoyt, and a small band of humanistic vocational educators, are now arguing that career education should be for life not just for work. In keeping with Dewey, they suggest the need for a curriculum and pedagogy that would

deal with the important and terrible problems of underemployment by imparting to students the tools they will need to grow throughout life. In this view, career education can deal with the unemployed self by encouraging learning through experience. This means that the schools would prepare youth for their life careers by building the basis for future growth. With such a background, as one grows older one knows how to look for stimulation and how to find rewards in any experience--both in one's leisure and in one's work. In other words, one has learned the joys of learning and how to realize these. One has learned how to put one's unemployed self to work in any situation. To Dewey, education must help "to carry a person over dead places in the future." He called this process the "experiential continuum":

> The most important attitude that can be formed is that of desire to go on learning. If impetus in this direction is weakened instead of being intensified, something much more than mere lack of preparation takes place. The pupil is actually robbed of native capacities which otherwise would enable him to cope with the circumstances that he meets in the course of his life.

Dewey was concerned to prepare young people for an unpredictable future (a goal that differs greatly from vocationalism which assumes a predictable and steady-state future). Dewey, too, wanted to prepare young people for the world of work, one that he recognized would not always be pleasant. But unlike the vocationalists, he did not want to *lower* the expectations of young people through teaching them that bad jobs are their assigned lot in life. Dewey did not view resignation with equanimity. He did not want lower expectations, he sought to instill *realistic* expectations. Realistic, not lower. For in practice, Dewey wanted to equip youth to find educative experience even in the worst jobs. He felt that each worker should have "the education which enables him to see within his daily work all there is in it of large and human significance."

To achieve this end, Dewey and his contemporary Alfred Whitehead argued that education should be based on experience or self-discovery. They showed that acquiring a specific skill without understanding its theoretical background was not learning, because the knowledge could not be later used when a problem was presented in a slightly different context. At the same time, theoretical knowledge is useless and quickly lost if it is not acquired in the context of a practical experience. Thus, for education to have later value for work and leisure, what is required is the marriage of liberal and technical education. Whitehead argued vigorously for technical education, but by this he did not mean that students should acquire specific vocational skills in the classroom. To do so, he argued, would lead to a society of bored, unproductive workers "full of unpractical revolutionary ideas." If a nation fails to give liberal skills to all workers "Society will then get what it deserves." He added,

> I am only asserting the principles that training should be broader than the ultimate specialization, and that the resulting power of adaptation to varying demands is advantageous to the workers, to the employers, and to the nation.

Thus, for career education to be responsive to the problems of underemployment, it would not be consciously or pointedly vocational. Rather, in the early years, it would foster the building of self-confidence, curiosity, and the love of learning. This would provide the basis for growth throughout life. The basic career competencies of reading, writing and computation would be stressed and

integrated with practical applications of such knowledge. But even as late as the high school level, there would be no specific skills training, other than for such skills as typing, carpentry, auto mechanics, and basic management that could be used on or off the job by all students male and female, black and white, college-oriented and work-oriented. Even 4-year colleges might turn their backs on undergraduate, technical degrees in engineering, business, and teaching. Specific skills would be seen as best learned on the job, in graduate education or in continuing adult education in community colleges.

Although vocationalists have the upper-hand at the moment, there are other competing philosophies of how one should go about improving the fit between education and work—philosophies that are consistent with the goals of Dewey and Whitehead but not saddled with guilt by association with the "progressivism" of these philosophers. The first of these is "cooperative education," in which students from junior high school through the senior year of college have the option of spending up to half of their time learning about the world of work through actual job experiences. Such leading social scientists as James Coleman, Christopher Jencks, and Urie Bronfrennbrenner argue that this is not only the best way to gain realistic expectations about the world of work, it also tends to expose students to a wider variety of job options, social classes, and age groups than they would experience if they spent all of their time in the classroom. It is, thus, not only good technical training, it is good education.

Another concept that seems more appropriate to the problems of underemployment than vocationalism is the relatively new idea of mastery learning, as put forth by such sociologists as James Block and William Spady. Above all, mastery learning shows potential for overcoming the feeling of many people that they are incapable of learning. Studies of important socializing institutions—family, work, church, and school—indicate that these institutions function to lower aspirations among the poor and working classes. These institutions are functional in that they shield youth from disappointments that are likely to occur in life—they teach young people that they "didn't really want to" go to college, get a good job, live in a big house, etc. But at the same time, they are dysfunctional in that children are taught that they are incapable of learning or competing with the middle class. Thus, inequality among the classes is perpetuated by lower-class institutions. For example, repeated failures in the primary and secondary grades drive nearly 30 percent of American youth into vocational programs and another 30 percent into the custodial, "general education" program for those who are not college bound.

Mastery learning seeks a more functional alternative than the acceptance of failure. It is an attempt to insure students against failure—thus building the desire to learn. It is a structured form of learning in which the student passes over progressively more difficult hurdles, each with a reward on the other side. Importantly, the learner progresses at his or her own pace. Evaluations of the method show that, eventually, almost everyone will experience the pleasure of successfully learning through this method. Failure is all but eliminated; at worst, it is a temporary experience. Students are thus motivated through their own accomplishments, and the problem of the unwilling learner disappears. The system also transforms students from competitors to teammates (the brilliant student is no longer seen as a rate-buster; the slow student is no longer seen as a

dunce). Experimental evidence also indicates that the role of the teacher is transformed from an authoritarian to an authority, and the relative role of the students from dependents to independents.

Significantly, the attitudes and behavior generated by mastery learning are those most compatible with what is required in new democratic workplaces characterized by teamwork, freedom from close supervision and participation by workers in decision-making. Ultimately, then, mastery learning is relevant career education.

Practically speaking, mastery learning is also attractive because it offers a way of circumventing many of the problems of credentialism: students can be certified and recertified as meeting various levels of performance with each major hurdle they clear in key subject areas. There could be dozens of levels of performance for each subject, and each individual could progress from level to level at his or her own pace. Whenever the student left or dropped out of school, he could leave with a certificate of his level of competence in half a dozen or more relevant subjects (For example, typing level 70, spelling level 62, math level 48). At any time during his life, the student could return to school for instruction or testing in order to upgrade his certificate. Since the level of performance is competency-based, (and *not* based on class standing, completion of units or any of the other current measures unrelated to performance), the individual need only demonstrate skill or understanding in the area of knowledge, no matter where the student attained the level of competence or mastery (in school, on the job, or during leisure time).

Performance-based certification is thus a strong alternative response to the pressures for vocationalism because it directly addresses the following kinds of problems: Meaningless credentials, class biases in learning, competitive grading, sanctions against dropping out; barriers to continuing education; lack of credit for non-institutional learning, and lack of credit for technical or applied learning.

WORK AS LEARNING

Dewey's notion of the experiential continuum, Whitehead's desire to fuse theory with its practical implications, and the new concepts of mastery learning and performance certification, could all come together in the workplace and offer at least one practical, relatively inexpensive response to underemployment. To see how these disparate concepts might meld quite coherently, work must be viewed as a learning experience.

Shaw once said that the only time his education was interrupted was when he was in school. Many adults would probably concur, at least to the extent that they feel they learn more now on the job than they ever did in the classroom. And we would imagine that this feeling would be more likely held by people who, like Shaw, had good jobs. Indeed, the recent Survey of Working Conditions found that white-collar workers rated items related to learning on the job as the two most important factors contributing to their job satisfaction.

Significantly, the survey showed that less affluent and less educated workers ranked these two items–interesting work and the opportunity to develop special abilities on the job–*lower* than did more affluent and more highly educated workers.

This evidence has been interpreted by Irving Kristol and others as proof of the inherent dullness or inferiority of millions of workers. These people, according to Kristol, deserve the lousy jobs they have and, since they aren't complaining, the rest of us shouldn't worry. This would be all fine and good if the labor market for workers functioned as smoothly as eighteenth century economists and their latter day disciples posit. However, intelligent workers are often denied challenging jobs because of their social class standing, sex, race, or educational credentials. There is considerable evidence that many blue-collar workers *can* find rewards in challenging work, and that the current system wastes the talents and potential contributions of millions of intelligent workers. Although many of these workers say they are quite satisfied with dull, repetitive jobs, after a short training course to build their confidence and motivation, they are often willing to try challenging work experiences– and a remarkable number of them succeed on these jobs after such training. Moreover, experiments with workers who once said they were satisfied with unchallenging jobs indicate that they refuse to go back to the old routine after their jobs are redesigned to include challenge, responsibility, and learning opportunities.

Apparently, the education and work experiences of the disadvantaged and working classes are often such that they destroy the confidence of otherwise bright and motivated individuals. Not only do they say they do not want potentially rewarding experiences, they come to believe that they would fail if they were faced with the responsibility these activities entail.

Experiments in Europe and America in which learning has become the goal of blue-collar jobs have shown remarkable success in meeting these problems of underemployment. Management experts in so-called Organizational Development and Socio-Technical Systems are starting to build a body of evidence that indicates that individual growth and organizational growth can occur simultaneously and compatibly. For example, in a General Foods plant in Topeka, Kansas, all workers have the opportunity to learn all the jobs in the plant–and are compensated for each new job they learn. Almost all workers, including those who have only minimal levels of education, know how to repair the plant's complex, transistorized, computer-like monitor with thousands of circuits and switches. It was found that learning is the key to job satisfaction in this plant. Even more important, this desire to learn has spread to non-work activities. General Foods offers to refund the tuition for any course any of its employees pursues in his spare time. Three times the numbers of workers in the Topeka plant take advantage of this offer than the average for all other General Foods plants. Apparently, learning on the job has whetted the workers' appetite for more education. It has overcome the sense of educational inadequacy that afflicts so many blue-collar workers. Moreover, because productivity is 40 percent higher in this plant than in a comparable but traditionally designed plant, there is hope that other employers will follow the example.

Although the design, execution, and evaluation of the Topeka plant are not without considerable faults, the plant nevertheless points the way for further and more refined experiments. Philosopher Thomas Green has looked at the design of work, and goes one step further than the management experts arguing that jobs should be designed as mastery learning experiences. Employers should

". . .attend to the hidden curriculum of the job itself in an effort to see that there are no jobs . . . leading to no subsequent lesson."

Unfortunately, many of even the best designed blue-collar and white-collar jobs offer few "subsequent lessons." After the short, initial period in which the job is learned, there often is simply nothing more to be learned. A bad job is like Gertrude Stein's Oakland—once you are there, there is no there there. For example, in the space of a couple of weeks one can learn all there is to know about making a light bulb, including how to repair the machines that do almost all of the work. In such jobs as this—and making light bulbs is rather typical of industrial work—the opportunity for human growth is severly limited by the basic lack of complexity of the task to be done. For this reason, many experts advocate that workers should be rotated in order to learn other people's jobs until, eventually, every worker has learned to do everyone's job in the plant, office, or company. Indeed, at the General Food's plant in Topeka, the system of financial rewards is based on the number of jobs the worker has learned. (There is a theoretical ceiling on this process of course—what does the worker do for an encore when he has learned every job in the plant?)

The Topeka system is not entirely out of keeping with the traditional practices of worker development in America, in which the primary incentive for training is promotion: One learns to do one's boss's job in order to one day take his place. Such a process leads to narrower and narrower successive stages of training. Not only does the system lock the worker into a restricted career path, it closes his options for mobility to other parts of the organization or to other employers. Moreover, training does not develop the person to carry him over dead spots in his life; rather, it channels him to meet the technical requisites of his next job.

Peter Drucker has contrasted this system with the Japanese practice of "continuous learning." In Japan, every worker attends a regular, scheduled weekly training session. Significantly, these sessions do not focus on the learning of a single skill; rather, the purpose is to foster individual growth and a community of spirt among the workers. Drucker (known to embellish) states that the president of a corporation might attend a session in welding taught by the workers. Drucker contrasts the purpose of learning in Japanese industry the "Zen approach" with the Western and Chinese "Confucian approach".

> The Confucian concept, which the West shares, assumes that the purpose of learning is to qualify oneself for a new, different and bigger job. The nature of learning is expressed in a learning curve. Within a period of time this student reaches a plateau of proficiency, where he then stays forever.
>
> . . .The purpose of [The Japanese Zen concept] learning is self-improvement. It qualifies a man to do his present task with continually wider vision, continually increasing competence, and continually rising demands on himself. While there is a learning curve, there is no fixed and final plateau.

Drucker makes a strong case for America to adopt a system similar to that which he claims exists in Japan. He argues that the current system in the West is "actually a bar to true learning."

There are other models in which work has been made into a learning experience. For example, in Eastern Europe it is recognized that the maker of light bulbs will quickly learn everything that there is to know about his actual

job. Therefore, a system of continuing learning has been established, the goal of which is to permit the worker to learn the theory behind industrial practices. The curious light bulb maker might thus be given the resources to learn the physics of light and electricity, about the sources and chemistry of tungsten, manganese, and neon, and about the engineering principles on which the machines that make the light bulb were designed. In short, there is no limit to how deep or how broad the worker might pursue knowledge about his work. This system comes close to Dewey's ideal that each worker should be given the tools to find all that is interesting and ennobling about his work. And, unlike job redesign, the dull or unwilling worker is not forced into accepting a challenge that he doesn't want or is incapable of handling--there is no coercion to learn or accept responsibility.

Thus, there are several well-documented methods for making work a process of discovery and growth--methods that only await translation into the American context. Still, some jobs--cleaning toilets, for example--do not lend themselves to any of these methods; workers in such jobs probably must be given the tools to find growth in their free-time activities.

Another problem that would continue to exist even with the implementation of work as learning is that of credentials. Moreover, even if the courts continue to rule against the improper use of credential requirements, some kinds of licensing and credentialing will continue to exist. It is not that credentials *per se* are under attack, it is that their improper application is being questioned. Thus, the problem is to create a credentials system that does not subvert the processes of learning and growth, and one that is equitable in that it allows for equal access, easy upgrading, and credit for experience however gained.

The task at hand, then, may be to join the concepts of competency-based credentialing with the workplace reforms designed to make jobs into learning experiences. For such a marriage to occur, there would have to be broad acceptance of new criteria for what constitutes an educated person. Stephen Bailey argues that a person is not necessarily educated who has served a 12- or 16-year sentence in an educational institution. More precisely, the educated person "knows how his field of specialization relates to other areas and divisions of human knowledge and experience." To Bailey, the educated person is one who manifests that he or she has undergone a process of personal growth. The field of the person's knowledge is not important; rather, the individual need only show excellence in his chosen field. Bailey presents a strong and well-illustrated case for recognition of such excellence earned while on the job:

> . . .a master plumber who had understood physical theories of water pressure, levers, and valves, who had extended his interest in pipes to include the physical and musical principles underlying the trombone; or who had traced water in the faucet back to ecological issues of water conservation should be recognized and academically credentialed as "an educated person," whether or not he had met formal distribution requirements in some college catalogue.

A difficulty that arises with the integration of Bailey's proposal with on-the-job-training is that few employers are competent to teach the theory that underlies work, and even fewer are in the position to examine or meaningfully credential their workers. Some workers will overcome this problem by attending

classes at local schools, and others will convince school credentialing authorities of their competence; but there are real limitations to the amount of such self-initiated activity that can or should be expected. First, only about 4 percent of those involved in formal, adult education have less than a high school diploma; blue-collar workers simply are uncomfortable in middle-class schools. Second, why should it be expected of workers that they should pursue rigid, school-based educations just at the time that non-traditional approaches are being advocated for young, middle-class students?

That workers want their learning to be work-based should not be viewed as an obstacle to offering them academic credit; rather, it might be seen as an opportunity for the true integration of work and learning. Schools, now in a desperate search for "new clientele," might take the initiative and approach employers with programs that would grant credit for learning that occurred on the job, in class, or wherever. Using flexible performance certification or competency-based systems, the purpose would be to facilitate the continuous upgrading of workers' credentials.

Equally important, educators could work with employers to improve the quality of on-the-job-training (which currently suffers from many of the shortcomings of vocational education). Educators would work to apply the principles of mastery learning to take workers through successively more complex stages of knowledge about their work. They could offer theoretical instruction on the job, they could develop supporting courses in the classroom, (perhaps team-taught with supervisors or workers from the company). Educators would serve as expert consultants, developing sound curriculums, helping to overcome the learning problems of older and disadvantaged workers and, most singularly, offering a system of recognition and transferable credits for what workers learn. In exchange, employers would provide equipment, facilities, tuition, and some time-off for employees and for supervisors who acted as staff or teachers. Although such employer cooperation sounds utopian, the 3M Company, Goodrich, and Kimberly Clark have initiated programs remarkably similar to what is proposed here. Many employers may now be willing to undertake such programs as they see that organizational development experiments in which learning has been the goal and job design have often led to decreases in absenteeism, turnover and job dissatisfaction, and increases in motivation and loyalty to the company. Moreover, several recent studies show that employers feel that their current rate of return on educational investments is low, and they almost all look to improvising school-employer relations as the first step in correcting this. Even more basically, the changes in the demographics, attitudes and aspirations of the work force outlined earlier may create such chronic problems of underemployment that employers will be forced to provide work that is a learning experience if these employers want to continue to rely on the efforts of workers.

Finally, what is most evident is that workers would benefit from a change in the current education-work intersection. Recognizing that educational reform alone cannot meet the problems of growing underemployment, it nevertheless can do some important things to remove the increasing contradictions between expectations and realities in industrial society. In order to extend opportunities

for individual growth, increase social and economic productivity, and to provide greater social justice, it is rather certain that ways need to be found to provide greater complementarity between the learning and work aspects of life.

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